

*Application No. 10/758,012
Amendment dated September 4, 2009
Reply to Office Action of June 4, 2009*

*Docket No. 0051-0217P
Art Unit: 3753
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AMENDMENTS TO THE DRAWINGS

One sheet of Replacement Drawings is attached in order to label FIGS. 5-7 as CONVENTIONAL ART.

REMARKS

The Applicants thank the Examiner for the thorough consideration given the present application. Claims 2-6 and 8 were previously cancelled. Claims 1, 7, and 9 - 13 are pending. Claims 1, 7, 9, 10, and 12 are amended. Claims 1 and 7 are independent. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Examiner Interview

The Applicants wishes to thank the Examiner McCalister and Examiner Hepperle for the courtesies extended to Applicants' Representative, Carl T. Thomsen, Registration No. 50,786, during the telephone interview which was conducted on August 26, 2009. During the interview, Applicants' Representative discussed proposed changes to independent claims 1 and 7 to further clarify the claimed subject matter. By way of this Amendment, the claims have been amended in the manner discussed during the interview, and are believed to place the application into condition for allowance. Accordingly, reconsideration and allowance of the present application are respectfully requested.

If, during further examination of the present application, any further discussion with the Applicants' Representative would advance the prosecution of the present application, the Examiner is encouraged to contact Carl T. Thomsen, at 1-703-208-4030 (direct line) at his convenience.

Amendments to the Drawings

One sheet of Replacement Drawings is attached in order to label FIGS. 5-7 as CONVENTIONAL ART.

Objection to the Claims

In response to the Examiner's objection, claims 10 and 12 have been amended. Reconsideration and withdrawal of the objection to the claims is respectfully requested.

Rejection Under 35 U.S.C. § 112, second paragraph

Claims 1, 7, and 9-13 stand rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed.

The Examiner has set forth certain instances wherein the claim language lacks antecedent basis or is not clearly understood.

In order to overcome this rejection, the Applicants have amended claims 1, 7, 10, and 12 to correct each of the deficiencies specifically pointed out by the Examiner. The Applicants respectfully submit that the claims, as amended, particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejections Under 35 U.S.C. §102(b) and 103(a)

Claims 1, 7, and 9-13 stand rejected under 35 U.S.C. §102(b) as being anticipated by Arishiro et al. (U.S. 2001/0008061) in view of Mori et al. (U.S. 5,191,218).

This rejection is respectfully traversed.

Arguments Regarding Independent Claims 1 and 7 as Amended

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the present application, each of independent claims 1 and 7 has been amended to include *inter alia*

- (a) each work receiving opening being disposed inwardly or outwardly relative to the vacuum suction channel,
- (b) each of the minute sectional suction channels has an axis extending in a direction that is orthogonal to an axis of the corresponding work receiving section, and having a cross-sectional area that is smaller than that of the vacuum suction channel,
- (c) the adjustment part jets out the compressed air based on the signal from the negative pressure sensor when the vacuum level rises above a maximum negative pressure, and stops the compressed air when the vacuum level falls below a minimum negative pressure, the maximum negative pressure being determined by an increased work load rate, and the minimum negative pressure being determined by a decreased work load rate, wherein the maximum negative pressure is a lower absolute pressure than the minimum negative pressure.

Advantages of the Present Invention

The advantages obtained by the above features (a)-(c) are as follows:

Due to the above features (a)-(c), each work receiving opening is disposed inwardly or outwardly relative to the vacuum suction channel, and each of the minute sectional suction channels has an axis extending in a direction that is orthogonal to an axis of the

corresponding work receiving section, and has a cross-sectional area that is smaller than that of the vacuum suction channel. Therefore, even when the work load rate is decreased, for example, only one or two work receiving openings receive works, the vacuum level of the work receiving openings can be retained at a certain level where the works can be sucked in the work receiving openings.

This is to say, the cross-sectional area of the minute sectional suction channel is smaller than that of the vacuum suction channel. Therefore the minute sectional suction channel can serve as a pressure resistance when the vacuum generation mechanism is operated. (See, for example, page 9, lines 18-27 and FIGS. 1, 4(a), and (b) for support.)

Thus, the vacuum level of the work receiving openings can be retained at a certain level where the works can be sucked in the work receiving openings as stated above.

When the work load rate of the present invention is increased, for example, almost all of the work receiving openings receive works, the vacuum level rises above the maximum negative pressure which is determined by the increased work load rate. In this case, the adjustment part jets out the compressed air based on the signal from the negative pressure sensor.

On the other hand, when the work load rate is decreased, for example, only one or two work receiving openings receive works, the vacuum level falls below a minimum negative pressure which is determined by the decreased work load rate. In this case, the adjustment part stops the compressed air based on the signal from the negative pressure sensor.

In this manner, according to the present invention, the vacuum level of the work receiving openings can be securely stable by the operation of the adjustment part regardless of the work load rate of the work receiving openings, or the increased work load rate or the decreased work load rate.

The Applicants believe that no combination of Arishiro et al. and Mori et al. discloses the features (a) and (c) above.

Regarding Arishiro et al. Reference

The Arishiro et al. document merely, discloses an index table including a plurality of holding recesses 12, and vacuum source 35 connected to the holding recesses 12. However, Arishiro et al. do not disclose that a negative pressure sensor is provided for detecting the vacuum level of the work receiving opening of the conveyer table, nor that the adjustment part is provided for adjusting the vacuum level of the work receiving opening of the conveyor table based on a signal from the negative pressure sensor.

In addition, although reference numeral 37 of the Arishiro et al. document may be a control valve, Arishiro et al. document is silent as to whether reference numeral 37 represents a negative pressure sensor.

Although the Examiner has pointed out that Arishiro et al. discloses a minute sectional suction channel located between the vacuum suction channel and the work receiving openings, the so-called minute sectional suction channel does not have an axis extending orthogonally to an axis of the work receiving opening.

Moreover, Arishiro et al. do not explicitly or inherently disclose that the sectional area of the minute sectional suction channel is smaller than that of the vacuum suction channel.

The only evidence that the Examiner has provided regarding the cross-sectional areas of the so-called minute sectional suction channel and the vacuum suction channel of Arishiro et al. is the annotated FIG. 11 on page 7 of the Office Action. However, it is not apparent from FIG. 11 that the cross-sectional area of the so-called minute sectional suction channel is smaller than that of the vacuum suction channel.

As the Examiner knows well, a prior art reference anticipates the subject matter of a claim when that reference discloses every feature of the claimed invention, either explicitly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997) and *Hazani v. Int'l Trade Comm'n*, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed Cir. 1997). While, of course, it is possible that it is inherent in the operation of the prior art device that a particular element operates as theorized by the Examiner, inherency may not be established by probabilities or possibilities. What is inherent, must necessarily be disclosed. *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) and *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

Therefore, the Examiner cannot argue that the cross-sectional area of the so-called minute sectional suction channel of Arishiro et al. is either explicitly or inherently smaller than that of the vacuum suction channel.

The Examiner then argues that it would be obvious for the cross-sectional area of the so-called minute sectional suction channel of Arishiro et al. to be smaller than that of the vacuum suction channel. Again, the Examiner has provided no evidence of such obviousness.

Therefore, the so-called minute sectional suction channel of Arishiro et al. cannot serve as a pressure resistance when the vacuum generation mechanism is operated, and the vacuum level of the work receiving openings cannot be retained at certain maximum and minimum negative pressures when the works can be sucked in the work receiving openings.

Regarding the Mori et al. Reference

Although the Mori et al. document discloses a vacuum chuck, the vacuum chucks of the Mori document are for chucking wafers.

This is to say, Mori et al. fail to teach that the vacuum leak generation part includes a table base with a vacuum suction channel, and a conveyor table rotatably mounted on the table base, having a work opening for receiving a work, the work receiving opening being connected to the vacuum suction channel.

In addition, the Examiner has pointed out that Mori et al. disclose an adjustment part (115b).

Mori et al. do not teach that when the work load rate is increased, for example, almost all of the work receiving openings receive works, the vacuum level rises above the maximum level which is determined by the increased work load rate, nor that in this case, the

adjustment part jets out the compressed air based on the signal from the negative pressure sensor.

In addition, Mori et al. do not teach that when the work load level is decreased, for example, only one or two work receiving opening receive works, the vacuum level falls below a minimum level which is determined by the decreased work load level, or that in this case, the adjustment part stops the compressed air based on the signal from the negative pressure senor.

That is to say, Mori et al. do not teach at all that the vacuum level of the work receiving openings can be securely stabilized by the operation of the adjustment part, regardless of the work load rate of the work receiving openings, or the increased work load rate or the decreased work load rate.

Furthermore, Mori et al. disclose a vacuum chuck for chucking wafers, and therefore Mori et al. have nothing to do with the characteristic features (a)-(c) of the present invention, or any work load rate of the work receiving openings.

At least for the reasons explained above, the Applicants respectfully submit that the combination of elements as set forth in each of independent claims 1 and 7 is not disclosed or made obvious by the prior art of record, including Arishiro et al. (U.S. 2001/0008061) and Mori et al. (U.S. 5,191,218).

Therefore, independent claims 1 and 7 are in condition for allowance.

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Dependent Claims

All dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel features set forth therein.

All pending claims are now in condition for allowance.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested.

CONCLUSION

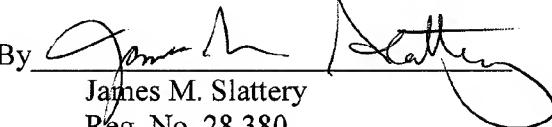
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030(direct line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

Date: September 4, 2009

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Attachment: One sheet of Replacement Drawings (FIGS. 5-7)